



United States Department of Agriculture

# **Moonlight Fire Area Invasive Plant Treatment Project Decision Notice**



Forest Service

Plumas National Forest

Mt Hough and Beckwourth  
Ranger Districts

January  
2018

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## Introduction

We, the USDA Forest Service, will treat priority invasive plant infestations in and immediately adjacent to watersheds affected by the 2007 Moonlight Fire using a combination of manual, mechanical, cultural, and chemical methods. The purpose of this project is to reduce the spread of invasive plant infestations in a timely and cost-effective manner, while protecting human health and critical ecosystem functions. The project will also create the ability to rapidly respond to new (currently nonexistent or undocumented) invasive plant infestations and newly identified invasive species and adaptively manage existing invasive plant infestations. This action responds to the goals and objectives outlined in the Plumas National Forest Land and Resource Management Plan, as amended by the Sierra Nevada Forest Plan Amendment, and helps move the project area towards desired conditions described in that plan. The environmental assessment (EA) documents the analysis of the selected action and two alternatives. These documents are incorporated by reference.

## Decision

We have read the Moonlight Fire Area Invasive Plant Species Treatment Project environmental assessment and finding of no significant impact, reviewed the analysis in the project record, including documents incorporated by reference, and fully understand the environmental effects disclosed therein. Based upon our review of all the alternatives and the comments received from the public for this project, we have decided to implement alternative B, as described in the EA.

The selected action will allow us to treat currently identified priority invasive plant infestations at approximately 1,235 locations (510 acres); establish a prioritization and treatment protocol that will allow for adaptive management of known infestations and evaluation of expanding and newly arising invasive plant occurrences for treatment; and, treat currently unidentified invasive plant infestations as they are discovered. Treatments will include manual, mechanical, and chemical methods. We will treat no more than 250 acres chemically each year. Invasive plants to be treated include jointed goatgrass, spotted knapweed, yellow starthistle, Canada thistle, Scotch broom, dyer's woad, and medusahead. In response to public scoping comments, alternative B has been modified after scoping to include some grazing and prescribed burning approaches as part of the integrated pest management activities.

This decision also includes implementing the design features, management practices and monitoring to protect natural resources. These are described in the EA at Appendix A: Design Features, Best Management Practices, and Mitigation Measures. Additionally, the Decision Notice includes minor changes to the selected action, including addition of a pilot grazing project, clarification of design features to address instructions from the Objection Review Officer, and revision of some text to be consistent with recommendations made by the U.S. Fish and Wildlife Service during project endangered species act consultation. These changes are detailed in Appendix A to this Decision Notice, Environmental Assessment Clarification, below.

## Reasons for the Decision

Invasive plants can have strong negative effects on wildland values. The location, severity, and management of the Moonlight and adjacent fires have created a high risk for invasive plant introduction and spread within the project area watersheds. Fire suppression activities, combined with large areas of high burn severity, resulted in considerable ground disturbance and the creation of favorable conditions for the spread of invasive plants. This level of past disturbance, combined with the large number of invasive species concentrated along roads where the risk of spread is high, greatly increases the vulnerability of the Moonlight Fire area and adjacent landscape. In about 69,000 acres of the project area surveyed before and after the Moonlight Fire, weed infestations increased from 277 locations covering

about 92.3 acres in March 2007 to 1,235 infestations covering about 510 acres currently. In light of this existing and growing infestation of invasive plants within the watersheds affected by the Moonlight Fire, it is appropriate to develop and implement an integrated pest management approach for invasive species control, as further described in FSM 2900.

### ***Meets the purpose and need***

Seven priority invasive plant species have been documented within the project area (jointed goatgrass, spotted knapweed, yellow starthistle, Canada thistle, Scotch broom, dyer's woad, and medusahead).

According to the mapping described above, species occurrences have increased considerably when compared to the previous year's data. Although actual presence likely exceeds known occurrences, this growth in numbers of known infestations and area infested suggests the continuing aggressive spread of weed infestations through the area. At present, most infestations are small, with 69 percent of the known locations occupying less than 0.1 acre. The level of infestation and the potential for expansion is of great concern.

The selected action will allow us to control and eradicate known infestations of priority invasive plants, reducing spread of these existing infestations. It also provides an approach for efficiently continuing to treat these priority species, should new infestations occur in the future. Therefore, the selected action meets the need to contain, control or eradicate infestations of invasive plants on National Forest lands, consistent with the Plumas National Forest Land and Resource Management Plan, as amended by the Sierra Nevada Forest Plan Amendment Final Environmental Impact Statement and Record of Decision.

### ***Addresses key issues***

The selected action also reduces environmental effects over the no action alternative (alternative A) and addresses the key issues analyzed in the EA. Project design features, mitigation and monitoring of the selected action will protect the health and safety of forest visitors, users and staff; protect forest wildlife, including pollinators; and protect watershed and water quality. While the no chemical herbicide alternative (alternative C), as described in the EA also protects these resources of concern, alternative C would not meet the project purpose and need.

### ***Addresses public concerns***

We heard from commenters who are concerned that the use of chemical herbicides in the selected action will result in health risks due to the toxicity of some of the herbicides. We are satisfied that the project design features, best management practices and mitigation of the selected action are sufficient to address these concerns, which are described on pages 7 and 8 of the project EA under the heading: Issues.

## **Other Alternatives Considered**

In addition to the selected action, we considered the no action alternative and one other action alternative.

### **Alternative A – No Action**

Under the no-action alternative, current management plans would continue to guide our management of the project area. Manual and mechanical controls would be our primary tool for treating invasive plant infestations under this alternative. Since the Moonlight fire, we have treated approximately 31 acres of weed infestations, using both mechanical and manual methods. Herbicide application authorized by the Keddie Ridge Hazardous Fuels Reduction Project Environmental Impact Statement and Record of Decision have resulted in treatment of 7.6 acres within the Moonlight Invasive Plant Treatment project area, primarily Canada thistle and yellow starthistle.



The no-action alternative serves as a baseline to compare the effects of other alternatives and we analyze it to meet the requirements of the Forest Service Handbook, Section 1909.15, Chapter 10, 14.2. In addition, the no-action alternative responds to some public comments received. Some commenters argue that controlling invasive plants on the project area is neither desirable nor feasible and recommend that we take no action and accept the presence of invasive species as a new baseline condition. As *Safeguarding the Nation from the Impacts of Invasive Species*, formalized a policy of the United States to prevent the introduction, establishment and spread of invasive species, as well as to eradicate and control populations of invasive species that are established., this path is contrary to the agency mission to sustain the health, diversity, and productivity the Nation's forests and grasslands. The purpose and need for the project establish that control of invasive species by some method is necessary to reduce the threat to forest resources. Thus, the no-action alternative fails to meet the project purpose and need.

## Alternative C – Treatment without the use of Herbicides

Several respondents suggest that alternative means of weed control such as grazing, mowing, or prescribed burning are preferable to herbicide use. We are committed to an integrated pest management approach using the least impactful methods to achieve effective control, and there is evidence that some use of herbicide can be an effective tool as part of an integrated pest management program. However, due to the degree of public concern which identified several issues with the herbicide component of the selected action (concerns about effects to wildlife/pollinators, concerns for human health, and concerns about water quality), an alternative that uses all approaches except for chemical treatment will be considered in detail in the environmental assessment to compare and disclose any effects. This alternative would be identical to the selected action, except that it would not include herbicide use.

Treatments would rely on mechanical, manual, and cultural (including focused use of grazing and prescribed fire) options. Similar to the selected action, the amount of area treated would be dependent on the extent of known infestations and available capacity to complete treatments (funding, staff time, volunteers, etc.). As described on page 22 of the project EA, alternative C would require considerably greater staff time to achieve similar levels of invasive plant treatment as the selected action, and would likely be less effective at controlling Canada thistle, the toadflaxes, and medusahead. For these reasons, we determined that alternative C would not meet the project purpose and need.

### ***Alternatives Considered but Eliminated from Detailed Study***

In addition to the alternatives considered in detail in the EA, there were six alternatives that were either initially considered and eliminated from detailed study, or were developed to address specific issues raised during scoping, but determined not to merit detailed study.

## Alternative D – Use of Alternative Substances to Registered Pesticides

We did not consider in detail the use of alternatives to registered pesticides and herbicides as some commenters advocated. Many alternative substances (e.g. hot foam, hot water, corn gluten, and sugar) are not registered by the Environmental Protection Agency as herbicides; therefore, assessments of their risks to resources that have been subjected to the same testing and disclosure requirements as have registered herbicides do not exist. Following the policy of the Pacific Southwest Region of USDA Forest Service we on the Plumas National Forest use only pesticides registered by both the state of California and the U.S. Environmental Protection Agency, and use only adjuvants<sup>1</sup> registered by the state of California, (FSM

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<sup>1</sup> An adjuvant is any substance in an herbicide formulation or added to the spray tank to improve herbicidal activity or application characteristics (<http://extension.psu.edu/pests/weeds/control/adjuvants-for-enhancing-herbicide-performance>).

2150.3).

Available information on alternative substances indicates limited or unknown effectiveness on perennial species. For example, corn gluten is considered effective on seedlings that are just starting to grow (i.e. prior to root elongation), so it would not be effective in controlling established, aggressive perennials or many larger annuals. The ineffectiveness of manual and mechanical treatments on deep-rooted sprouting perennials (such as Canada thistle) is the primary reason that the Forest Service is considering the use of herbicides for these types of invasive plants. In addition, compared to manual treatment via hand-pulling or select or directed spray herbicide application, the application of alternative substances tends to be less targeted due to their modes of action or application method. Therefore, they represent a higher risk to nontarget species, particularly native vegetation.

### **Alternative E – Use of Prescribed Fire**

Several commenters suggested use of prescribed fire to control infestations of invasive plants. We have analyzed the use of prescribed fire for invasive plant control and determined it not to be effective for this project.

Limited use of fire, such as torching individual invasive plants, broadcast burning areas in conjunction with other treatments, and pile burning plant materials that are manually removed, is a tool within the integrated pest management approach of alternative B. Exclusive use of prescribed fire for invasive plant control is operationally infeasible due to the isolated locations of infestations, low likelihood of suitable burn conditions when plants are susceptible to control by fire, and uncertain effect of fire on many focus species. We did not consider exclusive use of prescribed fire in detail because of our concerns with wildland fire risk and potential difficulties in implementing effective treatment. Terrain and fire weather conditions in the area, as well as location of infestations in high traffic areas or low- flammability fuels types, severely restrict the feasibility of prescribed burning within the project area. Furthermore, the effectiveness of treatment depends on the season of the burn, with most effective invasive plant control often obtained through summer or fall burns; late-season burning is frequently rendered infeasible by fire weather conditions or concerns for adjacent resources (such as private land, structures, or timber stands). In addition, certain invasive plants considered in this proposal, particularly deep-rooted perennial species, respond favorably or unpredictably to burning. Prescribed burning could also result in the spread of invasive plants as seen in the Moonlight fire. Much of the area to be treated has been subject to high-intensity wildfire. If fire were an effective treatment, invasive species infestations would be lower in these areas, which is not the case.

### **Alternative F – Use of Grazing by Sheep and Cattle**

Commenters also suggest grazing by domestic livestock rather than herbicide use in control of invasive plants. While we will consider grazing by goats as one of the treatment tools available in the selected action's integrated pest management approach, the use of grazing alone is unlikely to be effective. Most of the project area has active grazing allotments, which have not reduced the existing invasive plant infestations. The use and management of these allotments is the subject of a separate environmental assessment being prepared, and is outside of the scope of this project. Grazing is unlikely to effectively reduce infestations of rhizomatous perennials such as Canada thistle. The use of domestic sheep is not feasible in the project area, as the California Fish and Wildlife Department has conducted a bighorn sheep assessment which identified the project area as suitable for introducing bighorn sheep into the area. Grazing domestic sheep in an area that may host wild bighorn sheep is not suitable, due to the high likelihood of transfer of pathogens carried by domestic sheep and highly lethal to wild bighorn sheep. If we believe grazing by goats is the only effective and feasible treatment for a particular infestation, our integrated pest management approach allows us to use it as needed.

## **Alternative G – Integrated Pest Management Excluding Glyphosate Herbicides**

The selected action includes using six chemical herbicides as part of an integrated pest management program. Herbicides would be applied following label directions and applicable State and Federal regulations. In addition, herbicides would be spot-applied in relatively small areas over time. There would be limited opportunity for human exposure, in particular for public/visitor exposure.

We considered an alternative excluding glyphosate herbicides, but retaining use of the other five herbicides, due to public concerns regarding this specific chemical. However, alternative C will consider the effects of treatment without the use of any form of herbicide. Analyzing the effects of alternative C, the selected action, and no-action alternatives will allow the line officer to compare these effects, specifically the use of herbicide, including glyphosate. Therefore, it is not necessary to analyze another alternative that eliminates one specific herbicide. The line officer will have the discretion to adopt the selected action or modify the selected action (drop use of certain herbicides or types of treatment) based on the range of analysis the specialists conducted.

## **Alternative H - Treat a Larger Area with Herbicides**

The interdisciplinary team considered several factors when they developed the selected action, including the amount of activity necessary to achieve the purpose and need and what is feasible to implement given existing resources. The selected action represents what is currently identified necessary to achieve project objectives based on what is known about infestations in the project area. In response to public comment, in the modified selected action we have removed an earlier 500-acre total limit to allow for additional treatments should the need arise or capacity increases. However, we retained the limit on chemical treatments in response to public concern about herbicides. Therefore, an alternative increasing the amount of herbicide use will not be considered in detail.

## **Alternative I - Use only Host-specific Herbicides**

Canada thistle is a major component of invasive plant infestations in the project. No effective herbicides specific to this species are available. Limiting our selection of herbicides to those that are narrowly host specific would not address the purpose and need of this project. The herbicides to be used are a mix of broad spectrum and selective herbicides. The selected action emphasizes limiting herbicide use and using targeted application methods, which would limit effects. In addition, design criteria would ensure any sensitive populations are avoided.

## **Public Involvement**

The NEPA process provides for open public involvement. The NEPA phase of a proposal begins with public and internal agency scoping. Scoping is the process used to identify major issues and to determine the extent of environmental analysis necessary for an informed decision to be made concerning a selected action. Issues are identified, alternatives are developed, and the environmental analysis is conducted and documented.

We solicited comments on the selected action from August 19 to September 18, 2015. We contacted more than 500 individuals, organizations, groups, and tribes with project information during and prior to this period. Project proposal information was sent to mining claimants, mining organizations, companies, and groups; local agency officials; organizations including Back Country Horseman's Association and Californians for Alternatives to Toxics; special use permittees; and adjacent land owners.

We received 33 comments during the scoping period. Commenters included 28 adjacent land owners, the California Certified Organic Farmers, the Greenville Rancheria Native American Tribe, the U.S.

Environmental Protection Agency, the Sierra Club Yahi Group, and the Pacific Crest Trail Association. The Plumas County Board of Supervisors discussed local concerns about the project at their September 11, 2015, meeting. We released the environmental assessment for public comment on January 11, 2017, via a published legal notice and letters sent to respondents from the scoping period. We received input from 4 individuals or organizations during the 30-day comment period. Our detailed response to the public comments we received in response to publication of the EA can be found in the project file.

We released the environmental assessment and draft decision notice for public review and objection on June 7, 2017, via a published legal notice and letters sent to respondents from the 30-day scoping period. We received objections from three individuals during the 45-day objection period. The Objection Review Officer held an objection resolution meeting with one of the objectors on September 12, 2017, after numerous attempts to contact the other two objectors met with no response. After that meeting the Objection Review Officer sent letters to the three objectors and the Responsible Officials documenting the objections and instructing the Responsible officials to resolve the objections by completing the following:

1. Expand the analysis in the EA to include and incorporate by reference:
  - a. the Durkin (2014) SERA Risk Assessment for Fluazifop-P-butyl, and
  - b. the Klotzbach and Durkin (2004) Risk assessment for Chlorsulfuron.
2. Further clarify the analysis of human health and safety risk in the EA and FONSI. The recreation analysis (EA page 33) and EA FONSI discussion page (70) do address this issue, however the findings in the FONSI section (page 70) should be further substantiated. Options include:
  - Include a separate Human Health Risk Assessment that synthesizes the pertinent findings of the National SERA risk assessments and discusses how design features and/or best management practices completely avoid or mitigate risk to human health, OR
  - Clarify the analysis of human health and safety risk in the Recreation analysis. Incorporate the findings and conclusions of SERA Risk assessments for each chemical and the surfactants (Bakke 2007) in the Recreation analysis and provide the linkage of how the design features and best management practices avoid or mitigate any risk to human health.
3. Add a targeted grazing pilot as agreed in the objection resolution meeting on September 12, 2017.

These additions to EA and FONSI are included in textual changes presented in Appendix A – Environmental Assessment Clarification.

### ***Tribal Consultation***

We notified the following Native American Indian tribes of the project Greenville Rancheria, Susanville Indian Rancheria, and Maidu Summit Consortium. We briefed the Greenville Rancheria on project details and discussed the Rancheria's concerns at a Tribal consultation meeting on September 29, 2015. Dan Elliott, Plumas National Forest Heritage Resources Program Manager; Jim Belsher-Howe, Mt Hough District Botanist; and Christine Handler, Enterprise NEPA Coordinator; met with Tribal representatives on January 12, 2017.

### ***Issues***

Using the comments we received, the interdisciplinary team identified several issues regarding the effects



of the selected action. The majority of public comments can be categorized into three issues of concern: potential effects of herbicides to wildlife, potential effects of herbicides to human health, and potential effects of herbicides to waters and watersheds. These concerns are evaluated in environmental consequences and we have described how we considered these issues in making our decision above.

### **Effects to wildlife, including pollinators**

Commenters are concerned that using herbicides could affect forest or aquatic wildlife or pollinator species. To limit these potential effects, we will use design features to protect certain sensitive species, particularly the Sierra Nevada yellow legged frog, which is listed as endangered under the Federal Endangered Species Act.

### **Effects to health of forest visitors, users, or staff**

Commenters are concerned that using herbicides could affect the health of forest visitors, users, or staff if they are exposed to treatment areas. Herbicides will be applied following label directions and applicable State and Federal regulations. In addition, herbicides will be spot-applied in relatively small areas over time and, to limit these potential effects high-use recreation areas will be signed to notify the public and we will notify prior to any applications in or near traditional use areas.

### **Effects to water resources**

Commenters are concerned that using herbicides could contaminate aquatic systems and sources of potable water for human use. To limit these potential effects, we will use best management practices such as buffers around streams or aquatic formulations of some herbicides where water contamination is a concern. We will also implement design features specific to protect water sources and aquatic resources.

## **Finding of No Significant Impact**

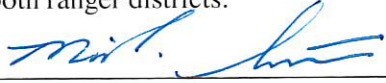
After considering the environmental effects described in the environmental assessment and finding of no significant impact, and specialist reports, we have determined that alternative B, the selected action, will not have significant effects on the quality of the human environment considering the context and intensity of impacts (40 CFR 1508.27). Thus, an environmental impact statement will not be prepared.

## **Findings Required by Other Laws and Regulations**

This decision is consistent with the Plumas National Forest Land and Resource Management Plan, as amended by the Sierra Nevada Forest Plan Amendment Final Environmental Impact Statement and Record of Decision. Findings required by other laws and regulations are listed in detail in the environmental assessment and finding of no significant effect. We have determined that the actions in alternative B are consistent with laws, regulations, and policies.

## Approval

This decision occurs within two ranger districts, therefore, we have split the decision. Micki Smith is the Responsible Official for activities on the Mt. Hough District and Matthew Jedra is the Responsible Official for activities on the Beckwourth District. The decision addresses activities in both ranger districts.




MICKI SMITH

Mt. Hough District Ranger

2-7-18

Date



MATTHEW JEDRA

Beckwourth District Ranger

2/7/2018

Date

## Appendix A – Environmental Assessment Clarification

The following changes to the EA text serve to correct minor errors, address clarification required by the objection reviewing official in his instructions to the responsible officials, and address minor changes to text required by the U.S. Fish and Wildlife Service during project endangered species act consultation. This consultation was ongoing when the Environmental Assessment and draft Decision Notice were released, and has since been completed. Some minor changes to project design feature and conservation measure phrasing resulted from the consultation.

The changes are grouped by their purpose for ease of review.

### Changes to correct minor errors in the EA text

Please replace the following text from page 3 of the EA (under Management Direction):

The Chief of the Forest Service identified invasive species as one of the four greatest threats to forest health (for more information, see <http://www.fs.fed.us/projects/four-threats>).

With the following:

Executive Order 13751, *Safeguarding the Nation from the Impacts of Invasive Species*, formalized a policy of the United States to prevent the introduction, establishment and spread of invasive species, as well as to eradicate and control populations of invasive species that are established. The executive order states, in part:

Invasive species pose threats to prosperity, security, and quality of life. They have negative impacts on the environment and natural resources, agriculture and food production systems, water resources, human, animal, and plant health, infrastructure, the economy, energy, cultural resources, and military readiness. Every year, invasive species cost the United States billions of dollars in economic losses and other damages.

Please replace the following text from page 9 of the EA (under Alternative A, No Action):

As the Chief of the Forest Service has identified invasive species as one of the four greatest threats to forest health, this path is contrary to the agency mission to sustain the health, diversity, and productivity of the Nation's forests and grasslands.

With the following:

Executive Order 13751, *Safeguarding the Nation from the Impacts of Invasive Species*, formalized a policy of the United States to prevent the introduction, establishment and spread of invasive species, as well as to eradicate and control populations of invasive species that are established.

Please replace the following text from page 12 of the EA (last sentence of second full paragraph on page):

Project operations would begin in 2017 and continue until invasive plant management goals are met or until such time as new information warrants additional environmental analysis.

With the following:

Project operations will begin in 2018 and continue until invasive plant management goals are met or until such time as new information warrants additional environmental analysis. The Forest Service expects the management goals to be met within ten years.

## Changes required by the objection reviewing official in his instructions to the responsible officials

In Table 2, second column, fifth text cell from top on page 15 of the EA, please replace the following description of "Grazing":

Use of specific domestic animals to treat infestations invasive plants. Grazing for invasive species control would generally be targeted on specific infestations of specific invasive plants, closely monitored, and controlled (e.g. two annual treatments of intensive, short duration grazing by goats over a three year period has shown to effectively control yellow starthistle in some settings [Davison et al. 2005]). Livestock grazing subject to existing grazing allotments is not considered an invasive plant treatment strategy in this project.

With the following:

Use of domestic goats to treat infestations of invasive plants. Grazing for invasive species control will generally be targeted on specific infestations of specific invasive plants, closely monitored, and controlled. Fences will be installed around grazing units. Livestock grazing subject to existing grazing allotments is not considered an invasive plant treatment strategy in this project. In response to objection resolution officer instructions, a pilot targeted grazing project for control of weeds will be included in the first year's annual implementation plan.

On page 33 of the EA, replace the first paragraph at the top of the page, which reads:

The selected action includes using six chemical herbicides as part of an integrated pest management program. Herbicides would be applied following label directions and applicable State and Federal regulations. In addition, herbicides would be spot-applied in relatively small areas over time and those areas would be signed as appropriate to notify the public. There would be limited opportunity for human exposure, in particular for public and visitor exposure.

With the following:

The selected action includes using six chemical herbicides, Aminopyralid, Chlorsulfuron, Fluzifop-P-butyl, Glyphosate, Imazapyr, and Triclopyr, as part of an integrated pest management program. Syracuse Environmental Research Associates (SERA), an independent laboratory, has performed human health and environmental risk assessments on each of these chemicals under contract to the Forest Service. The SERA assessments for Aminopyralid (Durkin 2007), Chlorsulfuron (Klotzbach & Durkin 2004), Fluzifop-P-butyl (Durkin 2014), Glyphosate (Durkin 2011a), Imazapyr (Durkin 2011b) and Triclopyr (Durkin 2011c) concluded that none of these herbicides poses a human risk, either to applicators or members of the general public exposed to treated vegetation, when applied in accordance to label guidelines. Some potential for human health risk was identified though exposures to Fluzifop-P-butyl in cases of accidental exposure due to spills, particularly into surface waters, if the waters are subsequently consumed by humans, or if humans consume fish from surface waters subject to accidental spills (Durkin 2014, 66-67). A surfactant and dye will be added to the herbicides prior to application to aid in plant absorption of the herbicide and adhesion to foliage (the surfactant) and facilitate even coverage (the dye). The surfactant to be used (i.e. Agri-dex or an equivalent formulation) is a modified vegetable oil, which is



very unlikely to produce toxic secondary breakdown products. In addition, the marker dye to be used (i.e. Hi-Light Blue or an equivalent formulation) is a water-soluble dye that contains no listed hazardous substances (SERA 1997) and is unlikely to cause adverse effects on human health (Bakke 2007)

Under the selected action, herbicides will be applied following label directions and applicable State and Federal regulations. In addition, herbicides will be spot-applied in relatively small areas over time and those areas will be signed as appropriate to notify the public. There will be limited opportunity for human exposure, in particular for public and visitor exposure. Given these considerations, and spill prevention measures and safety measures for surface waters (prohibition of mixing chemical near waters, buffers from applications near surface waters), no adverse effects to the safety of forest visitors or users will result from the selected action.

On pages 70 and 71 of the EA, under: 2. The degree to which the selected action affects public health and safety, replace the second and third paragraphs, which read:

The selected action, alternative B, includes the use of herbicides. Public and Tribal comment indicated a concern that the use of herbicides may affect public health or safety. The Human Health Risk Assessments describe in detail the potential for adverse health effects in workers, users of the Plumas National Forest, and members of the public from the use of the proposed herbicides (Durkin 2007, 2011a, 2011b, 2011c). The risk assessment examines the potential health effect on all groups of people who might be exposed to any of the herbicides proposed for use. The analysis indicates there will be no significant effects on public health and safety.

All appropriate laws, policies, and regulations governing the use of herbicide, as required by the U.S. Environmental Protection Agency, the California Department of Pesticide Regulation, and the Forest Service Policy pertaining to herbicide use, will be followed, and all Forest Service personnel in charge of projects involving herbicide application will be Qualified Applicator Certified by California Department of Pesticide Regulation. All contract applicators will be appropriately licensed by the state, Coordination with the appropriate County Agricultural Commissioner will occur, and all required licenses and permits will be obtained prior to any herbicide application. The public will be notified prior to implementation of herbicide treatments through posting of signs at treatment areas and access points, as specified in the project design features. Alternative B (selected action) adheres to all laws and regulations regarding herbicide use and includes stringent project design features which will minimize potential hazards to workers and to public health and safety. There will be no adverse effect to water quality because project design features include treatment buffers on all wells, ponds, and springs used for domestic water supplies. Furthermore, within 100 feet of recreation sites (campgrounds, trails, trailheads, dispersed camping areas, and known blackberry picking sites), cautionary notice signs will be posted at the recreation site prior to herbicide treatments.

With the following:

The selected action, alternative B, includes the use of herbicides. Public and Tribal comment indicated a concern that the use of herbicides may affect public health or safety. The Human Health Risk Assessments describe in detail the potential for adverse health effects in workers and members of the public from the use of the selected herbicides and associated surfactants and marker dyes (Durkin 2007, 2011a, 2011b, 2011c, 2014; Klotzbach & Durkin, 2004, Bakke 2007). The risk assessments examine potential health effects on all groups of people who might be exposed to any of the herbicides to be used. These analyses found no human health risk associated with exposures to areas treated with those herbicides, either to applicators or the general public. Thus, there will be no significant adverse effects to human health and safety.

All appropriate laws, policies, and regulations governing the use of herbicide, as required by the U.S. Environmental Protection Agency, the California Department of Pesticide Regulation, and the Forest Service Policy pertaining to herbicide use, will be followed, and all Forest Service personnel in charge of projects involving herbicide application will be Qualified Applicator Certified by California Department of Pesticide Regulation. All contract applicators will be appropriately licensed by the state, Coordination with the appropriate County Agricultural Commissioner will occur, and all required licenses and permits will be obtained prior to any herbicide application. The public will be notified prior to implementation of herbicide treatments through posting of signs at treatment areas and access points, as specified in the project design features. Alternative B (selected action) adheres to all laws and regulations regarding herbicide use and includes stringent project design features which will minimize potential hazards to workers and to public health and safety. There will be no adverse effect to water quality because project design features include treatment buffers on all wells, ponds, and springs used for domestic water supplies. Furthermore, within 100 feet of recreation sites (campgrounds, trails, trailheads, dispersed camping areas, and known blackberry picking sites), cautionary notice signs will be posted at the recreation site prior to herbicide treatments. This will allow forest users who prefer not to be exposed to herbicides to avoid these areas after treatments.

In the References Section, on page 76 of the EA, please add the following reference after “Durkin, P.R. 2011c”:

Durkin, P. R. 2014. Scoping/screening level risk assessment on Flauzifop-P-butyl; Final Report: Morgantown, WV: Syracuse Environmental Research Associates, Inc. Retrieved from <https://core.ac.uk/download/pdf/24067611.pdf>

## Changes required for consistency with the Endangered Species Act Consultation

In Table 2, second column, first cell on page 15 of the EA, please add the following as an additional “Select” at the bottom of the cell:

Backpack sprayer using low pressure nozzle that limits application to within 12 inches of the nozzle.

In the second paragraph on page 18 of the EA, please replace:

Surfactants and marker dyes may be added to any herbicide application, unless limited by specific project design features. Surfactants and marker dyes are adjuvants—compounds that improve mixing, application, or effectiveness of an herbicide. Surfactants enhance absorbing, spreading, sticking, and other properties of herbicides, allowing for use of lower application rates. Marker dyes are used to visually confirm the location of the herbicide application; this assists applicators in limiting application to target plants and reduces the risk of application to nontarget organisms and areas.

With the following:

Surfactants and marker dyes may be added to any herbicide application, unless limited by specific Project Design Features. Surfactants and marker dyes are adjuvants—compounds that improve mixing, application, or effectiveness of an herbicide. Surfactants enhance absorbing, spreading, sticking, and other properties of herbicides, allowing for use of lower application rates. The Forest Service proposes to add the surfactant Agri-dex at label rates to the herbicide mixtures. Marker dyes are used to visually confirm the location of the herbicide application; this assists applicators in limiting application to target plants and

reduces the risk of application to non-target organisms and areas. The Forest Service proposes to use Hi-Light Blue or an equivalent formulation at label rates.

In Table 3, fourth row, on page 16 of the EA, please replace:

<i>Centaurea diffusa</i> (diffuse knapweed)	Control	Aminopyralid or glyphosate - directed spray for small infestations	0.2
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With the following:

<i>Centaurea solstitialis</i> (yellow starthistle)	Control	Aminopyralid or glyphosate - directed spray for small infestations	
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In the next row of Table 3, fifth row, on page 16 of the EA, please add the “(total)” under the number 66.1 in the fourth column of the row. This signifies that the 0.2 acres of yellow starthistle previously cited in prior row is included in the total of the fifth row.

In Table 3, page 16 of the EA, please delete the tenth row, which reads:

<i>Linaria vulgaris</i> (yellow toadflax)	Eradicate	Manual treatment	0.1
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In the final row of Table 3, on page 16 of the EA, please change the value of total acres of known invasive plant infestations from the current 508.6 to **508.3**.

In the second row of Table 21 on page 80 of the EA, Project Design Feature description for PDF#4, please replace:

- 2) All applications will cease when weather conditions exceed those on the label
- 3) Applications will not be performed when the National Weather Service forecasts a greater than 70 percent probability of measurable precipitation (greater than 0.1 inches) within the next 24 hour period
- 4) Applications will cease when wind speed exceeds 10 mph
- 5) Spray nozzles will produce a relatively large droplet size (500-800 microns)
- 6) Low nozzle pressures will be used (15 psi)
- 7) Spray nozzles will be kept within 24 inches of target vegetation during spraying
- 8) A pressure gauge or pressure regulator will be required on each backpack sprayer

With the following:

- 2) All applications will cease when weather conditions exceed those on the label or those stated in the Additional Mitigation Measures for Sierra Nevada Yellow-legged Frog (below), whichever is stricter.
- 3) Applications will cease when wind speed exceeds 10 mph
- 4) Spray nozzles will produce a relatively large droplet size (500-800 microns)
- 5) Low nozzle pressures will be used (15 psi)
- 6) Spray nozzles will be kept within 24 inches of target vegetation during spraying
- 7) A pressure gauge or pressure regulator will be required on each backpack sprayer

In the fourth row of Table 21 on page 82 of the EA, Project Design Feature description of PDF#20, please replace:

Within Sierra Nevada yellow-legged frog habitat, all invasive plant treatments, including mechanical, manual, cultural and chemical treatments, will conform to standards established in consultation with the

US Fish and Wildlife Service. See tables below for proposed stream side buffers and the Sierra Nevada yellow-legged frog conservation measures, below.

With the following:

Within Sierra Nevada yellow-legged frog habitat, all invasive plant treatments, including mechanical, manual, cultural and chemical treatments, will conform to standards established through consultation with the US Fish and Wildlife Service. See following section, Design Features Specific to Sierra Nevada Yellow-Legged Frog, for stream side buffers and the Sierra Nevada yellow-legged frog conservation measures, below.

Please delete the seventh and eighth rows of Table 21 on Page 83 of the EA, Project Design Features 25 and 26. Do not renumber the remaining PDFs.

In the tenth row of Table 21 on page 83 of the EA, Project Design Feature description of PDF#29, please replace:

Herbicide use guidelines will be developed for use proximate to streams and other water bodies in consultation with the US Fish and Wildlife Service.

With the following:

Herbicide use guidelines have been developed for use proximate to streams and other water bodies in consultation with the US Fish and Wildlife Service. See following section, Design Features Specific to Sierra Nevada Yellow-Legged Frog for these guidelines.

In the first row of Table 21 on page 84 of the EA, Project Design Feature description of PDF#32, please replace:

Chlorsulfuron use will be restricted on soils with high clay content. If this chemical is used, application methods will be limited to select treatment. No application will be allowed when soils are water saturated.

With the following:

Chlorsulfuron use will be restricted on soils with high clay content. If this chemical is used on soils with high clay content, application methods will be limited to select treatment. No application will be allowed when soils are water saturated.

In the second row of Table 21 on page 84 of the EA, Project Design Feature description of PDF#33, please replace:

Soils above 3,500 feet in elevation: application of Aminopyralid, Chlorsulfuron, and Triclopyr (including equipment rinsing) will not occur on deep, coarse textured, saturated soils. For elevations above 4,000 feet, district hydrologist or soil scientist will be consulted about the proper timing of herbicide application in the spring prior to treatments.

With the following:

Application of Aminopyralid, Chlorsulfuron, and Triclopyr (including equipment rinsing) will not occur on deep, coarse textured, saturated soils. For elevations above 4,000 feet, district hydrologist or soil scientist will be consulted about the proper timing of herbicide application in the spring prior to



treatments.

In the third row of Table 21 on page 84 of the EA, Project Design Feature description of PDF#34, please delete the following:

State website: <http://waterrightsmaps.waterboards.ca.gov/ewrims/gisapp.aspx>

In the final row of Table 26, second column on page 86 of the EA, please replace:

82 feet

With the following:

82 feet, Exceptions: No buffer is required for grazing by goats. A 25 – foot buffer is required for flaming treatments.

On page 86 of the EA, under the heading Additional mitigation measures for Sierra Nevada Yellow-legged Frog, please replace:

Based on past consultation with the U.S. Fish and Wildlife Service for similar projects, the following additional mitigation measures are proposed for protection of the Sierra Nevada Yellow-legged Frog. These measures may be adjusted, depending on the outcome of section 7 consultation with the U.S. Fish and Wildlife Service.

With the following:

The following additional mitigation measures have been negotiated in consultation with the U.S. Fish and Wildlife Service for protection of the Sierra Nevada Yellow-legged Frog.

After measure number 4 at the bottom of page 86 of the EA, please insert the following:

4.a. Within 500 feet of known occupied sites for the Sierra Nevada Yellow-legged Frog precautions will be issued to, and care will be taken by, workers to avoid crushing or trampling amphibians.

At the top of page 87 of the EA, under measure number 5, please replace:

5. Herbicide would not be applied during the wet season (November 1 through April 15) to minimize herbicide in the environment.

With the following:

5. Herbicide will not be applied during the wet season (November 1 through April 15) to minimize herbicide transport in the environment.

On page 87 of the EA, under measure number 6, please replace:

6. No herbicide would be applied within suitable Sierra Nevada yellow-legged frog habitat if there is a greater than 30 percent chance of more than 0.1 inches of precipitation predicted within the next 48 hours. No herbicide would be applied outside suitable Sierra Nevada yellow-legged frog habitat if there is a greater than 50 percent chance of more than 0.1 inches of precipitation predicted within the next 48 hours. The 0.1 inch is based on following “measurable” precipitation prediction data provided by the National Weather Service.

With the following:

6. No herbicide will be applied within 82 feet of suitable Sierra Nevada yellow-legged frog aquatic habitat if there is a greater than 30 percent chance of more than 0.1 inches of precipitation predicted within the next 48 hours. No herbicide will be applied outside suitable Sierra Nevada yellow-legged frog habitat if there is a greater than 70 percent chance of more than 0.1 inches of precipitation predicted within the next 24 hours. The 0.1 inch is based on following "measurable" precipitation prediction data provided by the National Weather Service.

On page 87 of the EA, under measure number 8, please replace:

8. Prior to initiating prescribe burns, herbicide application, and other project activities that could put at risk Sierra Nevada yellow-legged frogs, surveys of each site would be conducted by a Forest Service biologist. If during the surveys, and life stages of the Sierra Nevada yellow-legged frog are found, the project activities would stop, the Forest Service will create a 750 feet buffer upstream and downstream from the frog detection point, and 75 feet wide on both sides of the stream would not be treated. No prescribed burn would occur within these buffers.

With the following:

8. Prior to initiating project activities that could put at risk Sierra Nevada yellow-legged frogs, surveys of each treatment site will be conducted by a Forest Service biologist. (Note: Most treatment sites within suitable habitat have already been surveyed to protocol. The areas will not be resurveyed if no Sierra Nevada yellow-legged frogs have been found in the stream system.).

On page 87 of the EA please replace measures number 9 and 10:

9. No heavy equipment would be used to remove invasive shrubs (e.g. Scotch broom) within 82 feet of streams that have suitable Sierra Nevada yellow-legged frog habitat...

10. No herbicide, or other chemicals that might adversely affect the frogs or their habitat would be used within the buffer zones described in table 23 and table 24 above.

With the following:

9. A qualified biologist must be present during manual treatments on any stream system occupied by SNYLF to watch for frogs.

10. In the event a SNYLF is detected in the vicinity of treatment units, the herbicide, prescribed fire or cultural treatment will be delayed for the season, or until the frog moved out of the treatment unit (note: frogs are PIT tagged in Lone Rock Creek and Boulder Creek, individual locations can be tracked). No herbicide, prescribed fire or cultural treatments will occur within 107 feet of the stream and for 750 feet up and down the frog locations. In the event a frog is found near manual treatments, either the treatment will be delayed for the season or a biologist will be present and no activity will occur within 100 feet of any frog locations.

On page 87 of the EA under measure number 14, please replace:

14. Fueling of gas-powered equipment with gas tanks larger than 5 gallons would not occur within 150 feet of surface waters, except at existing facilities. Fueling of gas-powered equipment less than 5 gallons would not occur within 25 feet of surface waters, except at existing facilities. No fueling of gas

powered equipment would occur within 500 feet of sites occupied by Sierra Nevada yellow-legged frog.

With the following:

14. Fueling of gas-powered equipment with gas tanks larger than 5 gallons will not occur within 150 feet of surface waters, except at existing facilities. Fueling of gas-powered equipment less than 5 gallons will not occur within 82 feet of surface waters, except at existing facilities. No fueling of gas powered equipment will occur within 500 feet of sites occupied by Sierra Nevada yellow-legged frog.

On the bottom of page 87 and the top of page 88 of the EA, please delete measure number 16. Do not renumber the remaining measures.

~~16. Within 50 feet of perennial or seasonal streams, if treatment reduced groundcover to less than 50 percent (recommended groundcover coverage from forest plan (USDA Forest Service 1988) of what it was prior to treatment for a contiguous area of greater than 0.25 acres, then mulching and revegetating may be required to minimize erosion and re-establish native vegetation. Only equipment, mulches, and seed sources that are free of non-native, invasive plant species would be used. Seeding would be avoided in areas where revegetation is anticipated to occur naturally, unless non-native, invasive plant species are a concern. Topsoil from disturbance would be saved and re-used in onsite revegetation, unless contaminated with non-native, invasive plant species. All activities that require seeding or planting would use only locally collected native seed sources. Plant and seed material would be collected from as close to the action area as possible. Persistent non-natives such as timothy, orchard grass, or ryegrass would be avoided.~~

On page 88 of the EA under measure number 19, please replace:

19. Tightly woven fiber netting or similar material shall not be used for erosion control or other purposes within Sierra Nevada yellow-legged frog suitable habitat to ensure that individuals do not get trapped, injured, or killed. Plastic monofilament netting or similar material would not be used at any of these projects because individuals of these listed species may become entangled or trapped in it.

With the following:

19. Tightly woven fiber netting, plastic monofilament, or similar material shall not be used for erosion control or other purposes within Sierra Nevada yellow-legged frog suitable habitat to ensure that individuals do not get trapped, injured, or killed.

On page 91 of the EA, under the heading *Monitoring* please replace the second paragraph:

Water quality monitoring would occur annually at a sample of streams associated with herbicide spray treatments that are occurring within 25 feet of a road, roadside ditch, or dry washes that have potential connectivity to a stream. Potential sites would be identified during the annual implementation process. Pre-treatment samples will serve as background samples and will be taken prior to application of any herbicide treatments. Samples will not be taken during herbicide application. Post-treatment samples will not occur until completion of scheduled applications for the year. Timing of the samples would occur in the late fall during or within 48 hours of the first significant precipitation event that will cause some runoff in channels and roadside ditches. If no measurable precipitation occurs within 90 days after the herbicide treatment and/or after three years of monitoring with no positives ever recorded, the monitoring program will be suspended until the project area gets precipitation within 10 days post-treatment.

With the following:

Water quality monitoring will occur annually at a sample of streams associated with herbicide spray treatments that are occurring within 25 feet of a road, roadside ditch, or dry washes that have potential connectivity to a stream. Potential sites will be identified during the annual implementation process. Pre-treatment samples will serve as background samples and will be taken prior to application of any herbicide treatments. Samples will not be taken during herbicide application. Post-treatment samples will not occur until completion of scheduled applications for the year. Timing of the samples will occur in the late fall during or within 48 hours of the first significant precipitation event that will cause some runoff in channels and roadside ditches. Water quality monitoring will occur to detect whether surface runoff is resulting in any detectable herbicide entry into water bodies. If after three years of monitoring no positives have ever been recorded, the monitoring program will be suspended for this project unless the project gets runoff producing precipitation (1 inch) within 10 days post-treatment.